

user. The user can then make an input selection and an output selection as described above.

Accordingly, AV/C controller does not need to process and store
5 substantial amounts of information regarding the many possible connections.
Thus, AV/C controller 450 can be designed with, for example, fewer logic gates,
a less powerful processor, and smaller memory capacity. In addition, the
amount of information that needs to be transported over network bus 230 is
reduced, and network bandwidth is not consumed by transporting this
10 information. Furthermore, the likelihood of an error in the connection
information is reduced because a lesser amount of information is needed, and
because there is a direct interaction with the target device instead of with
information stored previously for the target device. Thus, a user can select a
particular target device with confidence that a connection to the device will be
15 made.

In the present embodiment, there are two primary approaches a user can
implement to select and control the devices on the home network: an
interactive approach, and a remote approach. In the interactive approach, the
20 devices to be connected are within sight of the user (e.g., in the same room).
Thus, in the interactive approach, there may not be a need to query the state
variables because the user can see the devices to be connected to and to be
controlled. In the remote approach, the devices to be connected are generally

not within sight of the user, and so the state variables are queried so that the possible selections can be made known to the user.

In addition, network bus 230 can also be coupled to the Internet through
5 a gateway (not shown), so that a user can select and control devices from a remote location via the Internet.

In another embodiment, instead of an approach in which the user inputs selections manually, an automatic approach can be implemented. For
10 example, a user can program selections in advance (e.g., particular devices are to be selected at a certain day and time), and AV/C controller 450 can execute the programmed selections automatically. Also, AV/C controller 450 can be programmed to remember and store (record) a user's selections as they are made. AV/C controller 450 can then automatically execute these stored
15 selections at, for example, the same time the next week.

In addition to scrolling through available (connectable) AV/C units and subunits (e.g., using a round-robin approach), AV/C controller 450 can also be used to scroll through active channels on network bus 230. For example, if two
20 VCRs are included in the home network and both are running movies, a user at a TV can scroll between the active channels associated with each movie and select the channel showing the movie of interest.

Because the user can select the output plug to be used by a source device such as VCR 430, it is not necessary for the output to be provided to each of the possible output plugs. For example, if a user selects V3 (analog) as the output plug to be used, it is not necessary to stream the output to serial bus output plug 420 (digital) and onto network bus 230. In this case, in accordance with the present invention, the bandwidth available on network bus 230 is not consumed unnecessarily, thus increasing the amount of bandwidth for active connections between other devices on the network. In one embodiment, the output is still provided to each of the analog output plugs (e.g., V3 and V4), but is only provided to serial bus output plug 420 when that plug is selected by the user.

Figure 4B is a block diagram of one embodiment of AV/C controller 450 in accordance with the present invention. In general, AV/C controller 450 comprises bus 455 for communicating information, processor 461 coupled with bus 455 for processing information and instructions, random access memory (RAM volatile) 462 coupled with bus 455 for storing information and instructions for processor 461, read-only memory (ROM non-volatile) 453 coupled with bus 455 for storing static information and instructions for processor 461, and optional data storage device 454 such as a magnetic or optical disk. Network interface 458 is for coupling AV/C controller 450 to network bus 230 (Figure 4A) and may be an infrared or other wireless (e.g., radio frequency) device. Input/output device 457 provides the interface between input-select button 451,